



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE  
525 NE Oregon Street  
PORTLAND, OREGON 97232-2737

Refer to:  
OSB1999-1023

May 10, 1999

Fred Patron  
Federal Highway Administration  
The Equitable Center, Suite 100  
530 Center St, NE  
Salem, Oregon 97301

Re: Biological Opinion for the Eagle Creek (Dowty Road) Bridge Replacement

Dear Mr. Patron:

The National Marine Fisheries Service (NMFS) has enclosed the Biological Opinion (BO) that addresses your proposed project to replace the bridge at Eagle Creek (Dowty Road), this project is described in your Biological Assessment (BA) submitted with your request for consultation, plus in the addendum provided by Oregon Department of Transportation, Federal Highway Administration is the lead agency and ODOT is the designated non-Federal representative.

This opinion considers the potential effects of the project on Lower Columbia River steelhead trout (*Oncorhynchus mykiss*), Lower Columbia River chinook salmon (*O. tshawytscha*), and southwestern Washington/Columbia River cutthroat trout (*O. clarki*) which occur in the proposed project area, Lower Columbia River steelhead were listed as threatened on March 19, 1998 (63 FR 13347), The Lower Columbia River chinook were listed as threatened on March 24, 1999 (64 FR 14308), The southwestern Washington/Lower Columbia River cutthroat were proposed as threatened on April 15, 1999 (64 FR 16397). This opinion constitutes formal consultation for the Lower Columbia River steelhead trout, Lower Columbia River chinook salmon, and formal conferencing for the southwestern Washington/Columbia River cutthroat trout.

If you have any questions regarding this letter, please contact Nancy Munn of my staff at (503) 231-6269,

Sincerely,

A handwritten signature in black ink, appearing to read "William Stelle, Jr.", with a stylized flourish at the end.

**William Stelle, Jr.  
Regional Administrator**

cc: Elton Chang – FHWA  
Pieter Dykman – ODOT  
Greg Apke – ODOT  
Margie Willis – ODOT  
Randy Reeve – ODFW

**Endangered Species Act- Section 7  
Consultation**

**Biological & Conference Opinion**

Eagle Creek (Dowty Road) Bridge, Clackamas County

Agency: Federal Highway Administration  
Consultation Conducted By: National Marine Fisheries Service,  
Northwest Region

Date Issued: May 10, 1999

Refer to: OSB1999-01023

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## **I. Background**

On May 21, 1998, the National Marine Fisheries Service (NMFS) received a biological technical report and request from Oregon Department of Transportation (ODOT) for Endangered Species Act (ESA) section 7 consultation for a bridge replacement at Eagle Creek in Clackamas County. NMFS concurred with the determination that the proposed action may affect but is not likely to adversely affect Lower Columbia steelhead. In January 1999, consultation was reinitiated because new information revealed that there would be a possibility of take of anadromous fish in the pool underneath the bridge. Federal Highway Administration (FHWA) is the lead agency and ODOT is the designated non-Federal representative for transportation related actions in Oregon that are supported by funds from the (FHWA). This Biological Opinion (BO) is based on the information presented in the technical report and subsequent information provided by ODOT.

ODOT has determined that the Lower Columbia River (LC) steelhead trout (*Oncorhynchus mykiss*), Lower Columbia River (LC) chinook salmon (*O. tshawytscha*), and Southwestern Washington /Columbia River (SWCR) cutthroat trout (*O. clarki*) may occur within the project area.

ODOT is proposing to replace the existing two-lane bridge over Eagle Creek at Dowty Road in Clackamas County. The existing bridge is narrow, requires excessive maintenance, and is insufficient for carrying existing traffic. The action will involve replacing the existing bridge with a new structure and constructing a new road surface. The bridge span will be increased, and an in-stream bent will be required.

The effects determination was made using the methods described in *Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996).

This BO reflects the results of the consultation process. The consultation process has involved correspondence and communications to obtain additional information and clarify the technical report. As appropriate, modifications to the proposal to reduce impacts to the indicated species were discussed and enacted. This includes restricting in-water work to the recommended in-water work period, lengthening the bridge span to minimize long term effects to the stream bed, reducing the amount of riprap proposed by 50 percent, and incorporating measures that are listed as terms and conditions of the incidental take statement. ODOT has developed a planting plan that mitigates for in-water and riparian impacts, and will work with the Oregon Department of Fish and Wildlife (ODFW) to develop appropriate in-stream mitigation to be developed based on an analysis of limiting factors of the Eagle Creek watershed.

The objective of this biological opinion is to determine whether the action to replace the Eagle Creek Bridge at Dowty Road is likely to jeopardize the continued existence of the indicated species or destroy or adversely modify critical habitat.

## **II. Proposed Action**

The proposed action is to replace the Eagle Creek bridge at Dowty Road. The project is located on Eagle Creek, 0.4 miles upstream of its confluence with the Clackamas River. This action

includes removing the existing two-lane structure and replacing it with a new longer span. Construction of this bridge will occur in 1999.

The existing steel pony truss bridge was moved to Eagle Creek from a location in Multnomah County in the 1950's, and was subsequently heavily damaged in the 1964 flood. It was repaired and a wooden section was added over a washed out approach. The historic Barlow Trail forded Eagle Creek just downstream of the bridge. The channel in the action area varies in width from 150 feet in winter to approximately 55 feet in summer. Gradient is less than 2%.

### **Staging**

- The construction site would be accessed by driving equipment down a grade that would be provided by removing the wing wall on the southwest corner of the bridge. The existing bridge approach would be maintained on the south side, and the existing shoulders and toe slopes will be maintained.
- Work conducted within the high water line would be isolated from the active stream by conducting work at low water or by the use of temporary diversions.

### **Bridge Removal**

- The bridge deck would be removed, as will the existing bent 2, currently located near the south bank. Old bridge footings would be removed.
- The north bent would be left in place (to minimize impacts to streambank).

### **Bridge Installation**

- A new north abutment would be constructed about 30 feet north of the streambank. The old footings would be removed, and piles driven. Concrete forms would be built in the excavations, and concrete would be poured in the forms. The process is expected to take one day for excavation of the footing, and one week for the construction of the new footings.
- A new bent would be constructed in the river channel to support two precast concrete slabs. This work would be done during the in-water work period of July 15 through August 31. However, ODFW (Jim Grimes) will meet on-site on June 1, 1999. If the work area is dry and away from the active channel, and the weather conditions support such a decision, ODFW may extend the work window to June 1 through August 31 for 1999.
- A new south abutment would be constructed. This bent would support two precast concrete slabs. The bent would be placed on a footing supported by 14 steel pipe piles.
- Approximately 28,000 cubic feet of Metric Class 1000 riprap would be placed along the streambed and banks.
- The proposed bridge stormwater runoff would drain to vegetated bioswales.
- The new bridge would be curbed, and stormwater would run off the deck and flow over grass slopes to the stream.

## **Habitat Enhancement**

- The action includes two types of habitat enhancement efforts:
  - 1) A planting plan was developed for the action area and is currently being implemented. This addresses areas that have minimal amounts of vegetation in the vicinity of the action area, but are not directly being impacted by the project itself. The cost of this effort is approximately \$6,000.
  - 2) ODOT, ODFW and a consultant are currently assessing limiting factors for in- stream habitat in Eagle Creek upstream of the project. Once assessed, the team will develop an instream enhancement plan. The cost of implementing this plan will be approximately \$4,000.
- In addition, riparian vegetation impacted by the construction will be replaced at a 1.5:1 ratio.

## **III. Biological Information and Critical Habitat**

The listing status, biological information, and critical habitat elements or potential critical habitat for the indicated species are described in Table 1.

Table I. References to Federal Register Notices containing additional information concerning listing status, biological information, and critical habitat designations for listed and proposed species considered in this biological opinion.

<b>Species (Biological References)</b>	<b>Listing Status (Reference)</b>	<b>Critical Habitat (Reference)</b>
Lower Columbia River steelhead trout (Busby et al. 1995, Busby et al. 1996)	Listed Threatened (63 FR 13347, 19 March 1998)	Proposed (64 FR 5740, 5 February 1999)
Lower Columbia River Chinook Salmon (Meyers et al. 1998, Healey 1991)	Listed Threatened (63 FR 11482, 9 March 1999)	Not proposed
Southwestern Washington/Columbia River cutthroat trout (Johnson et al. 1999)	Proposed Threatened (64 FR 16397, 5 April 1999)	Not Proposed

## **IV. Evaluating Proposed Actions**

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). NMFS must determine whether the action is likely to jeopardize the listed species and/or whether the action is likely to destroy or adversely modify critical habitat. This analysis involves the initial steps of (1) defining the biological requirements and current status of the listed species, and (2) evaluating the relevance of the environmental baseline to the species' current status.

Subsequently, NMFS evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NMFS must consider the estimated level of mortality attributable to: (1) collective effects of the proposed or continuing action, (2) the environmental baseline, and

(3) any cumulative effects. This evaluation must take into account measures for survival and recovery specific to the listed salmon's life stages that occur beyond the action area. If NMFS finds that the action is likely to jeopardize, NMFS must identify reasonable and prudent alternatives for the action.

Furthermore, NMFS evaluates whether the action, directly or indirectly, is likely to destroy or adversely modify the listed species' designated critical habitat. The NMFS must determine whether habitat modifications appreciably diminish the value of critical habitat for both survival and recovery of the listed species. The NMFS identifies those effects of the action that impair the function of any essential element of critical habitat. The NMFS then considers whether such impairment appreciably diminishes the habitat's value for the species' survival and recovery. If NMFS concludes that the action will adversely modify critical habitat it must identify any reasonable and prudent measures available.

For the proposed action, NMFS' jeopardy analysis considers direct or indirect mortality of fish attributable to the action. NMFS' critical habitat analysis considers the extent to which the proposed action impairs the function of essential elements necessary for rearing and spawning of the listed salmon under the existing environmental baseline.

#### ***A. Biological Requirements***

The first step in the methods NMFS uses for applying the ESA section 7(a)(2) to listed salmon is to define the species' biological requirements that are most relevant to each consultation. NMFS also considers the current status of the listed species taking into account population size, trends, distribution and genetic diversity. To assess the current status of the listed species, NMFS starts with the determinations made in its decision to list the species for ESA protection and also considers new data available that is relevant to the determination (see Table I for references). The relevant biological requirements are those necessary for the listed species to survive and recover to naturally reproducing population levels at which protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment.

For this consultation, the biological requirements are improved habitat characteristics that function to support successful rearing, spawning, and migration. The current status of the LC steelhead, LC chinook and SWLC cutthroat, based upon their risk of extinction, has not significantly improved since the species was listed and, in some cases, their status may have worsened (see Table I for references). Freshwater habitat degradation has been a significant factor in the decline of these three species.

#### ***B. Environmental Baseline***

The biological requirements of the LC steelhead, LC chinook and SWLC cutthroat are currently not being met under the environmental baseline. As stated above, degradation of freshwater habitat is a significant factor in their decline. Their status is such that there must be a significant improvement in the environmental conditions they experience including the condition of any



designated critical habitat (over those currently available under the environmental baseline). Any further degradation of these conditions would have a significant impact due to the amount of risk the listed salmon presently face under the environmental baseline.

The current range-wide status of the identified ESU is referenced in Table I. The identified actions will occur throughout some of the range of the LC steelhead, LC chinook and SWLC cutthroat. The defined action area is the area that is directly and indirectly affected. The direct effects occur at the project site and may extend upstream or downstream based on the potential for impairing fish passage, hydraulics, sediment and pollutant discharge, and the extent of riparian habitat modifications. Indirect effects may occur throughout the watershed where actions described in this opinion lead to additional activities or affect ecological functions contributing to stream degradation. As such, the action area for the proposed activities include the immediate watershed containing the project and those areas upstream and downstream that may reasonably be affected, temporarily or in the long term. For the purposes of this opinion, the action area is defined as Eagle Creek downstream to the confluence with the Clackamas River and upstream a minimum of 2,000 feet (the possible extent of noise disturbance).

Eagle Creek is a major tributary of the Clackamas River. The mouth of Eagle Creek is approximately 15 miles upstream of the mouth of the Clackamas River. Eagle Creek is one of three major tributaries, along with Deep Creek and Clear Creek, whose confluences with the Clackamas River are below the two PGE hydropower dams. The location of the action area downstream of these dams increases the value of Eagle Creek as spawning and rearing habitat for salmonids in the Clackamas watershed.

The headwaters of Eagle Creek are on Wildcat and Squaw Mountains west of Mt. Hood. Eagle Creek is approximately 24 miles long. The lower four miles of Eagle Creek adjoins farmlands and rural residential areas, but upstream areas are in a deep canyon. Ownership of the lands adjacent to Eagle Creek is mostly private. Several county parks are located on the creek, and U.S. Forest Service and Bureau of Land Management lands encompass Eagle Creek above the National Fish Hatchery.

Fish species present in Eagle Creek include steelhead, chinook, coho, cutthroat, rainbow trout, whitefish, sculpins, squawfish, cottids, lamprey, dace, suckers and shiners. Eagle Creek and its tributaries provide spawning and rearing habitat for coho, winter steelhead, cutthroat and fall chinook. The mainstem also provides spawning and rearing habitat for spring chinook and summer steelhead. The pool beneath the bridge in the action area is a holding area for adult salmon and steelhead, and a rearing area for juvenile salmonids.

Eagle Creek is water quality limited for summer rearing temperatures. Extensive logging has occurred in the headwaters of the watershed. This has affected the supply of large woody debris, and potentially contributed to the decline in pools in the river noted by anglers. Turbidity and mass wasting can be a problem in wetter years. At the project site, mature hardwood grow in the riparian area upstream and downstream of the bridge. Near the existing south bridge abutment, the vegetation is dominated by Himalayan blackberry and reed canarygrass. The bridge currently drains directly into the creek and the runoff contributes sediment to the creek.

Based on the best available information on the current status of LC steelhead, LC chinook, and SWCR cutthroat range-wide (as referenced in Table 1); the population status, trends, and genetics; and the poor environmental baseline conditions within the action area, NMFS concludes that the biological requirements of the identified ESU within the action area are not currently being met. There are survey data available for steelhead salmon in this region. Populations are at low abundance relative to historical levels, and there has been a significant decline in steelhead abundance since the mid-1980s. Recent estimates of the proportion of hatchery fish in naturally spawning steelhead populations are over 45 percent in the Clackamas River. Habitat degradation, passage problems, and hatchery practices contribute to these declines. The situation is similar for chinook salmon. Major habitat problems are primarily related to blockages, forest practices, urbanization, and farming practices. Improvement in habitat conditions is needed to meet the biological requirements for survival and recovery of these species. The following habitat indicators are either at risk or not properly functioning within the action area: temperature, sediment, large woody debris, pool frequency, refugia, and riparian reserves. Actions that do not maintain or restore properly functioning aquatic habitat conditions would be likely to jeopardize the continued existence of anadromous salmonids.

## **V. Analysis of Effects**

### ***A. Effects of Proposed Actions***

The effects determination in this opinion Was made using a method for evaluating current aquatic conditions, the environmental baseline, and predicting effects of actions on them. This process is described in the document *Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996). The effects of actions are expressed in terms of the expected effect -restore, maintain, or degrade -on aquatic habitat factors in the project area.

For each individual action covered in this opinion, the effects on aquatic habitat factors and to species considered in this opinion can be limited by utilizing construction methods and approaches that are intended to minimize impacts. The effects of the proposed project have been evaluated based on the application of the ODOT's *General Minimization and Avoidance Measures* which are included as terms and conditions of the incidental take statement. Of particular importance are the limitation of working during the in-water work period (July 15 - August 31) when water levels are low (except as specifically mentioned in the project description); conducting in-stream work within a coffer dam if there is water in the work area; implementing erosion control measures; limiting the extent of disturbance in riparian areas, stream bank and bed; maintaining fish passage during construction; and minimizing direct discharge of sediments or pollutants into the stream.

For each of the project actions, the NMFS expects that the effects of the project actions will tend to maintain or restore each of the habitat elements over the long-term, greater than one year. In the short term, expected impacts include temporary disturbance to stream banks and bed, loss of some riparian habitat (blackberries and one clump of willows), and a temporary increase in turbidity and sediment input. Work will be isolated from the active stream by conducting work

at low water or by the use of temporary diversions (e.g., coffer dams). Fish may be temporarily displaced during the in-water work, including pile driving. There is also a slightly increased risk of a fuel oil spill into the action area during construction.

In the long term, this work would not be expected to have direct impact to the indicated species or have long term detrimental affects on the streambed or banks. Impacts will be minimized by incorporating indicated conservation measures, and the creation and enhancement of instream and riparian habitat. The potential effects from the sum total of proposed actions are expected to restore or maintain properly functioning stream conditions within the action area.

Specific effect:

- In-water work within the action area could result in a take of the indicated species. In-water work would consist of pile driving and the construction of bent 2. If the active channel is adjacent to this bent during construction, the work area will be isolated from the channel. The in-water pile driving would likely cause fish to avoid the area. This could impact fish up to 2,000 feet upstream and downstream of the site.
- The pool under the north end of the bridge is about 10 to 15 feet deep and is used by adult and juvenile salmonids. Fish using this pool may be displaced during the in-water work. This pool is used by recreational swimmers during the summer and fall, as are other areas in the lower portion of Eagle Creek. The construction disturbance would contribute to the existing level of activity, and contribute to the displacement of fish.
- Approximately 5,000 square feet of riparian habitat will be disturbed. Most of this is a temporary disturbance. Alteration of native vegetation will be minimal. Most vegetation that will be disturbed is Himalayan blackberry and reed canary grass. Native shrubs and trees will be planted within the disturbance area following construction. In addition, native vegetation is currently being planted in riparian areas upstream and downstream of the bridge to enhance riparian function (temperature, large woody debris, etc.) in the Eagle Creek watershed.
- Moderate sediment inputs to the stream are likely. However, the erosion control plan prepared by ODOT and the contractor will limit the extent of sediment-producing activities, and effective erosion control measures would be in place at all times during construction. Sediment-laden water created by construction activities shall be filtered before it leaves the right-of-way or enters a stream. Erosion control measures are further described in the terms and conditions of the incidental take statement.
- Stormwater runoff currently drains from the bridge deck directly into Eagle Creek. With the new bridge, stormwater runoff would flow to a vegetated swale before filtering through to the creek. This would reduce sediment and contaminant loading to the creek.
- There is a slightly increased risk of a fuel oil spill into the action area during construction. Measures described in the terms and conditions of the incidental take statement minimize the risk.

## **B. Effects on Critical Habitat**

NMFS designates critical habitat based on physical and biological features that are essential to the listed species. Essential features for designated critical habitat include substrate, water quality, water quantity, water temperature, food, riparian vegetation, access, water velocity, space and safe passage. Critical habitat has not been designated for the LC chinook. The action has been proposed as critical habitat for LC steelhead. Critical habitat includes the stream, bottom and water, and adjacent riparian zone within 300 feet of ordinary high water within the defined geographic extent. For each of the proposed actions, NMFS expects that the effects will tend to maintain or restore properly functioning conditions in the watershed under current baseline conditions over the long term. In the short term temporary increase of sediments and turbidity and disturbance of riparian habitat is expected. In the long term, no loss of stream or riparian habitat will occur. NMFS does not expect that these actions will diminish the value of habitat for the survival of the indicated species.

## **C. Cumulative Effects**

Cumulative effects are defined in 50 CFR402.02 as "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." For the purposes of this analysis, the general action area is the watersheds containing the project. Future Federal actions, including the ongoing operation of hydropower systems, hatcheries, fisheries, and land management activities are being (or have been) reviewed through separate section 7 consultation processes.

A wide variety of actions occur within the watershed defined within the BO. NMFS is not aware of any significant change in such non-Federal activities that are reasonably certain to occur. NMFS assumes that future private and State actions will continue at similar intensities as in recent years.

## **VI. Conclusion**

NMFS has determined based on the available information, that the proposed actions are expected to restore or maintain properly functioning stream conditions within the action area.

Consequently, the proposed actions covered in this opinion are not likely to jeopardize the continued existence of LC chinook salmon, LC steelhead, and SWCR cutthroat trout. NMFS used the best available scientific and commercial data to apply its jeopardy analysis, when analyzing the effects of the proposed action on the biological requirements of the species relative to the environmental baseline, together with cumulative effects. NMFS applied its evaluation methodology (NMFS 1996) to the proposed action and found that it would cause minor, short-term adverse degradation of anadromous salmonid habitat due to sediment impacts, in-water construction, and riparian disturbance. These effects will be balanced in the long-term through the proposed mitigation. Direct mortality from this project may occur during the in-water work.

## **VII. Conservation Recommendations**

Section 7 (a)(I) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Conservation recommendations are discretionary measures suggested to minimize or avoid adverse effects of a proposed action on listed species, to minimize or avoid adverse modification of critical habitat, or to develop additional information. In addition to those general minimization and avoidance measures attached as terms and conditions of the incidental take statement, NMFS requests that ODOT limit the extent of disturbance in riparian areas, the stream bank, and the streambed.

In order for NMFS to be kept informed of actions minimizing or avoiding adverse effects, or those that benefit listed species or their habitat, NMFS requests notification of the implementation of any conservation recommendations.

## **VIII. Reinitiation of Consultation**

Consultation must be reinitiated if: the amount or extent of taking specified in the Incidental Take Statement is exceeded, or is expected to be exceeded; new information reveals effects of the action may affect listed species in a way not previously considered; the action is modified in a way that causes an effect on listed species that was not previously considered; or, a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16). To re-initiate consultation, ODOT must contact the Habitat Conservation Division (Oregon Branch Office) of NMFS.

## **IX. References**

Section 7(a)(2) of the ESA requires biological opinions to be based on "the best scientific and commercial data available." This section identifies the data used in developing this opinion.

Busby, P., S. Grabowski, R. Iwamoto, C. Mahnken, M. Schiewe, T. Wainwright, R. Waples, J. Williams, C. Wingert, and R. Reisenbichler. 1995. Review of the status of steelhead (*Oncorhynchus mykiss*) from Washington, Idaho, Oregon, and California under the U.S. Endangered Species Act. 102p. Plus 3 appendices.

Busby, P., T. Wainwright, G.J. Bryant, L.J. Lierheimer, R.S. Waples, F.W. Waknitz, and I.V. Lagomarsino. 1996. Status review of west coast steelhead from Washington, Idaho, Oregon, and California. U.S. Dep, Commer., NOAA Tech Memo. NMFS-NWFSC-27, 261p.

DEQ 1996. 303d List of Water Quality Limited Streams, as Required Under the Clean Water Act. Oregon Department of Environmental Quality (DEQ), Portland, Or. 1996. ([www.dea.state.or.us/wg/303dlist/?03dDage.htm](http://www.dea.state.or.us/wg/303dlist/?03dDage.htm)).

- DEQ 1998. Draft 303d List of Water Quality Limited Streams, as Required Under the Clean Water Act. Oregon Department of Environmental Quality (DEQ), Portland, Or. 1998. ([www .deq.state.or .us/wq/303dlist/j03 dpage.htm](http://www.deq.state.or.us/wq/303dlist/j03dpage.htm)).
- DSL 1996. Essential Indigenous Salmonid Habitat, Designated Areas, (OAR 141-102-030). Oregon Division of State Lands. Portland, Or. 1996.
- Healey, M.C. 1991. Life history of chinook salmon (*Oncorhynchus tshawytscha*). Pages 311-393 in C. Groot and L. Margolis (eds.). Pacific Salmon Life Histories. Vancouver, British Columbia. University of British Columbia Press.
- Johnson, O.W., M.H. Ruckelshaus, W.S. Grant, F.W. Waknitz, A.M. Garrett, G.J. Bryant, K. Neely, and J.J. Hard. 1999. Status review of coastal cutthroat trout from Washington, Oregon, and California. U.S. Dept. Commer., NOAA Tech Memo. NMFS-NWFSC-37, 292p.
- Myers, J.M., R.G. Kope, G.J. Bryant, D. Leel, L.J. Liehr, T.C. Wainwright, W.S. Grant, F.W. Waknitz, K. Neely, S.T. Lindley, and R.S. Waples. 1998. Status review of chinook salmon from Washington, Idaho, Oregon, and California. U.S. Dept. Commerce NOAA Tech Memo. NMFS-NWFSC-35, 443p.
- NMFS (National Marine Fisheries Service) 1996. Making Endangered Species Act determinations of effect for individual and grouped actions at the watershed scale. Habitat Conservation Program, Portland, Oregon.
- ODFW 1996. Database --Salmonid Distribution and Habitat Utilization, Arc/Info GIS coverages. Portland, Or. 1996. ([rainbow. d fw.state. or. us/ftp/](http://rainbow.dfw.state.or.us/ftp/)).
- Weitkamp, L.A., T.C. Wainwright, G.J. Bnmt, G.B. Miller, D.J. Teel, R.G. Kope, and R.S. Waples. 1995. Status Review of Coho Salmon from Washington, Oregon, and California. U.S. Dep. Commer., N?AA Tech. Memo. NMFS-NFWWC-24, 258 p.

## **XI. Incidental Take Statement**

Sections 4 { d) and 9 of the ESA prohibit any taking {harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. Harass is defined as actions that create the likelihood of injuring listed species to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7{b){4) and section 7{o){2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. It also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

### ***A. Amount or Extent of the Take***

The NMFS anticipates that the action covered by this Biological Opinion has more than a negligible likelihood of resulting in incidental take of LC chinook salmon, LC steelhead, and SWCR cutthroat trout because of detrimental effects from increased sediment levels {non-lethal) and the potential for direct incidental take during in-water work {lethal and non-lethal). Effects of actions such as these are largely unquantifiable in the short term, and are not expected to be measurable as long-term effects on habitat or population levels. Therefore, even though NMFS expects some low level incidental take to occur due to the actions covered by this Biological Opinion, the best scientific and commercial data available are not sufficient to enable NMFS to estimate a specific amount of incidental take to the species itself. In instances such as these, the NMFS designates the expected level of take as "unquantifiable." Based on the information in the biological report, NMFS anticipates that an unquantifiable amount of incidental take could occur as a result of the actions covered by this Biological Opinion. The extent of the take is limited to within 2,000 feet of project activities.

### **B. Reasonable and Prudent Measures**

The NMFS believes that the following reasonable and prudent measures are necessary and appropriate to minimizing take of the above species.

1. Actions must be taken to minimize the amount and extent of incidental take during in-water work.
2. Effective erosion control and revegetation actions be taken on site to minimize fine sediment input in the stream over the long term.
3. Hazardous materials must be handled in such a way that minimizes the risk to aquatic and riparian habitats.

4. The extent of riparian impacts must be minimized, and plantings must occur that mitigate for the lost function provided by the trees and shrubs removed by the construction.
5. All plantings and mitigation sites must be monitored and meet criteria as described below in the terms and conditions.

### **C. Terms and Conditions**

In order to be exempt from the prohibitions of section 9 of the ESA, ODOT must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary

1. The site will be inspected one year after the completion of the action to assess the results of erosion control measures and restoration of the riparian habitat, and a report documenting the conditions will be prepared and provided to NMFS (Oregon Branch) for review.
2. Based on the results of the assessment and a determination that erosion control and/or revegetation of the riparian habitat are not effective as compared to undisturbed adjacent areas, additional actions will be taken as necessary and in agreement with NMFS to rectify the situation.
3. The NMFS requests that the instream mitigation plan be submitted and accepted by NMFS prior to construction activity .

### **General Minimization and Avoidance Measures**

4. **In-water Work**
  - Passage shall be provided for both adult and juvenile forms of all salmonid species throughout the construction period,- ODOT designs will ensure passage of fish as per ORS 498.268 and ORS 509.605.
  - All work within the active channel of all anadromous fish-bearing systems, or in systems which could potentially contribute sediment or toxicants to downstream fish-bearing systems, will be completed within ODFW's in-water work period. This in-water work period varies by system.<sup>1</sup> Any NMFS approved extensions of the in-water work period will first be approved by and coordinated with ODFW.
  - During ODOT project design, ODOT will work to minimize the amount of riprap used. In unshaded areas above the 5-year flood plain which are not scour-critical, ODOT will attempt to use biological bank control, or to backfill with native soil and plant with , willow and other riparian species. This installation will increase riparian shading and cover. Where riprap is necessary , only clean, non-erodible, upland angular rock of sufficient size for long-term bank armoring will be employed.
  - Alteration or disturbance of stream banks and existing riparian vegetation will be minimized. Where bank work is necessary , bank protection material shall be placed to maintain normal waterway configuration. Waterway bank slopes will be left no steeper than 1:2 .

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<sup>1</sup> Many non-estuarine systems have an in-water work period during the driest portions of the year



In areas with riprap installation, larger riprap (class 350 metric minimum) will be used preferentially within the 2-year floodplain of systems, where this riprap would come into contact with actively flowing water, and where using larger riprap would not constrict the size of the active channel (larger rock sizes create larger interstitial spaces for juvenile salmonids). Placement will be performed "in the dry" as much as possible, and from the top of the bank where possible. Riprap areas will be planted with willow stakes (and other riparian shrubs/trees) to increase shading and cover within the 10-year floodplain, where appropriate. Willow stakings will be of a species appropriate for the physiographic province and will be planted at an approximate density of 2000/ ha (generally).

## 5. Erosion Control

For all projects with the potential to contribute sediment to aquatic resources, an Erosion Control Plan (ECP) will be prepared by ODOT's Erosion Control Team and implemented by the Contractor. The ECP will outline how and to what specifications various erosion control devices will be installed to meet water quality standards, and will provide a specific inspection protocol and time response. Erosion control measures will be sufficient to ensure that turbidity does not exceed 10% above ambient (background) conditions.

- Erosion Control measures shall include (but not be limited to) the following:
  - Sediment detention measures such as placement of weed-free straw bales and silt fences at the bottom of newly-constructed slopes.
  - Construction of sediment settling basins where appropriate. Basins shall be constructed where appropriate, to divert runoff into these basins.
  - Temporary plastic sheeting for immediate protection of open areas (where seeding and mulching are not appropriate).
  - Erosion control blankets or heavy duty matting (e.g., jute) may be used on steep unstable slopes.
  - Sills or barriers may be placed in drainage ditches along cut slopes and on steep grades to trap sediment and prevent scouring of the ditches. The barriers will be constructed from rock and straw bales.
  - Biobags, weed-free straw bales and loose straw may be used for temporary erosion control. Temporary erosion and sediment controls will be used on all exposed slopes during any hiatus in work on exposed slopes.
- Effective erosion control measures shall be in-place at all times during the contract. Construction within the 5-year floodplain will not begin until all temporary erosion controls (e.g., straw bales, silt fences) are in-place, downslope of project activities within the riparian area. Erosion control structures will be maintained throughout the life of the contract.

- All temporarily-exposed areas will be seeded and mulched. Erosion control seeding and mulching, and placement of erosion control blankets and mats (if applicable) will be completed on all areas of bare soil within 7 days of exposure within 30 meters of waterways, wetlands or other sensitive areas, and in all areas during the wet season (after October 1). All other areas will be stabilized within 14 days of exposure. Efforts will be made to cover exposed areas as soon as possible after exposure.
- All erosion control devices will be inspected during construction to ensure that they are working adequately. Erosion control devices will be inspected daily during the rainy season, weekly during the dry season, monthly on inactive sites. Work crews will be mobilized to make immediate repairs to the erosion controls, or to install erosion controls during working and off-hours. Should a control measure not function effectively, the control measure will be immediately repaired or replaced. Additional controls will be installed as necessary.
- If soil erosion and sediment resulting from construction activities is not effectively controlled, the Engineer will limit the amount of disturbed area to that which can be adequately controlled.
- Sediment will be removed from sediment controls once it has reached 1/3 of the exposed height of the control. Whenever straw bales are used, they will be staked and dug into the ground 12 cm. Catch basins shall be maintained so that no more than 15 cm of sediment depth accumulates within traps or sumps.
- Where feasible, sediment-laden water created by construction activity shall be filtered before it leaves the right-of-way or enters an aquatic resource area. Silt fences or other detention methods will be installed as close as possible to culvert outlets to reduce the amount of sediment entering aquatic systems.
- A supply of erosion control materials ( e.g., straw bales and clean straw mulch) will be kept on hand to cover small sites that may become bare and to respond to sediment emergencies
- All equipment that is used for instream work will be cleaned prior to entering the two-year Floodplain. External oil and grease will be removed, along with dirt and mud. Untreated wash and rinse water will not be discharged into streams and rivers without adequate treatment.
- On cut slopes steeper than 1:2 a tackified seed mulch will be used so that the seed does not wash away before germination and rooting occurs. In steep locations, a hydro-mulch will be applied at 1.5 times the rate.
- Material removed during excavation shall only be placed in locations where, it cannot enter sensitive aquatic resources. Conservation of topsoil (removal, storage and reuse) will be employed.
- Measures will be taken to prevent construction debris from falling into any aquatic resource. Any material that falls into a stream during construction operations will be removed in a manner that has a minimum impact on the streambed and water quality.

## 6. Hazardous Materials

- ODOT actions will follow all provisions of the Clean Water Act (40 CFR Subchapter D) and DEQ's provisions for maintenance of water quality standards not to be exceeded within the Rogue Basin (OAR Chapter 340, Division 41). Toxic substances shall not be introduced above natural background levels in waters of the state in amounts which may be harmful to aquatic life. Any turbidity caused by this project shall not exceed DEQ water quality standards.
- The Contractor will develop an adequate, site-specific Spill Prevention and counter measure or Pollution Control Plan (PCP), and is responsible for containment and removal of any toxicants released. The Contractor will be monitored by the ODOT Engineer to ensure compliance with this PCP. Sediment releases greater than 10% above background levels will not be acceptable. No toxicants, including green concrete will be allowed to enter aquatic resource.
- No toxicant (including petroleum products) will be stored or transferred within 50 m (165 feet) of any waterbody. Areas for fuel storage, refueling and servicing of construction equipment and vehicles will be located at least 50 m away from any waterbody.
- Hazmat booms will be installed in all aquatic systems where:
  - a) Significant in-water work will occur, or where significant work occurs within the 5-year floodplain of the system, or where sediment/toxicant spills are possible.
  - b) The aquatic system can support a boom setup (i.e. the creek is large enough, low-moderate gradient ).
  - c) A significant aquatic resource occurs downstream or within the project area<sup>2</sup>
- Hazmat booms will be maintained on site in locations where "Diapering" of vehicles to catch any toxicants ( oils, greases, brake fluid) will be mandated when the vehicles have any potential to contribute toxic materials into aquatic systems.
- No surface application of nitrogen fertilizer will be used within 15.2 meters (50 feet) of any aquatic resource.

## 7. Riparian issues

- Where appropriate, boundaries of the clearing limits will be flagged by the project inspector of ODOT. Ground will not be disturbed beyond the flagged boundary .

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<sup>2</sup> Significant aquatic resources may include estuaries, spawning areas, or rearing areas.

- Alteration of native vegetation will be minimized. Where possible, native vegetation will be clipped by hand so that roots are left intact. This will reduce erosion while still allowing room to work. No protection will be made of invasive exotic species (e.g. Himalayan blackberry)
- All exposed areas greater than 100 m<sup>2</sup> within the riparian corridor will have a replanting plan which is appropriate for the local overstory/understory plant community. The replanting plan will emphasize endemic riparian species.
- Riparian overstory vegetation removed will have a replacement rate of 1.5:1. Replacement will occur within the project vicinity where possible and within the watershed at a minimum.

ODOT will require a contract grow period for all riparian mitigation plantings. In extremely unstable or unproductive areas, ODOT may release the Contractor from the contract grow period and develop a larger replanting area to compensate for this.

## 8. Monitoring

- All significant riparian replant areas, streambank and channel restoration/enhancement actions, and off-channel mitigation sites will be monitored to insure the following.
  - a) Finished grade slopes and elevations will perform the appropriate role for which they were designed.
  - b) Log and rock structures are placed appropriately and adequately secured.
  - c) Plantings are performed correctly and have an adequate success rate.
- Mitigation site monitoring will ensure that mitigation commitments have an adequate success rate to replace the functions they were designed to replace. ODOT Biology staff will produce post-construction and biannual reports on success of mitigation sites, available on request.
- Failed plantings and structures will be replaced, if replacement would potentially succeed. In cases of failed design, mitigation will generally be sought on another project, in a more appropriate location.
- ODOT will require a contract grow period for all riparian mitigation plantings. In extremely unstable or unproductive areas, ODOT may release the contractor from the contract grow period and develop a larger replanting, area to compensate for this.